

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 2-3, 5-7, 17-18, 22, 24-29 and 31 have been previously cancelled. Claims 1, 8-16, 19, 20, 34, 36, and 41 are amended to correct minor informalities. Claim 35 is been amended to include all the limitations of Claim 37, and Claim 37 has been cancelled without prejudice or disclaimer. Claims 38-40 are amended to depend from Claim 35 instead of Claim 37. New Claims 43 and 44 are added. No new matter has been added by way of these amendments.

With the entry of the claim amendments as set forth above, Claims 1, 4, 8-16, 19-21, 23, 30, 32-36, and 38-44 are pending in this application.

**I. Allowable Subject Matter**

Claims 37-40 were objected to as being dependent upon a rejected base Claim 35. By way of this Amendment and Reply, the base Claim 35 has been amended to include all of the limitations of allowable Claim 37, and thus is allowable. Claim 37 has been cancelled accordingly. Thus, Claims 35, and Claims 36 and 38-42 which depend therefrom, are now in condition for allowance.

**II. Claim Objections**

Claim 1 was objected to for informalities. By way of this Amendment and Reply, Claim 1 has been amended to add back the inadvertently omitted element, "a hub," as suggested by the Examiner. Accordingly, withdrawal of the objection to Claim 1 is respectfully requested.

**III. Claim Rejections under 35 U.S.C. § 112**

Claims 1, 35, 36, 41, and 42 were rejected under 35 U.S.C. § 112, second paragraph, for being indefinite.

More specifically, Claim 1 was rejected for insufficient antecedent basis for the element “the hub.” By way of this Amendment and Reply, Claim 1 has been amended to include “a hub,” as discussed above. Accordingly, the rejection of Claim 1 is now moot.

Claim 35 was rejected as “omitting essential steps.” Without acquiescing the merits of the rejection, Applicants have amended Claim 35 to include all of the elements of allowable Claim 37. Thus, the rejection of Claim 35 is now moot.

Accordingly, Applicants respectfully request withdrawal of the rejections of Claims 1, 35, 36, 41, and 42 under 35 U.S.C. § 112, second paragraph.

**IV. Claim Rejections under 35 U.S.C. § 103**

**A. Claims 1, 4, 8-10, 13-16, 19, 21, 23, 30, 32, and 33**

On page 4 of the Office Action, Claims 1, 4, 8-10, 13-16, 19, 21, 23, 30, 32, and 33 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 5,706,111 to Morales et al. (hereinafter “Morales”) in view of “A Low-Cost WDM Source with ASE Injected Fabry-Perot Semiconductor Laser,” IEEE Photonics Technology Letters, Vol. 12, No. 8, August 2000, page 1067- 1069, by Kim et al. (hereinafter “Kim”) and “Semiconductor Optical Amplifier-Based All-Optical Gates for High-Speed Optical Processing,” IEEE Journal on Selected Topics in Quantum Electronics, Vol. 6, No. 6, November/December 2000, pages 1428-1435, by Stubkjaer (hereinafter “Stubkjaer”). For at least the following reasons, Applicants respectfully traverse the rejection.

Independent Claim 1 recites, *inter alia*, an optical data transmission system including a hub, a plurality of optical network units (ONUs), and “a passive **kerb location having** an optical router and a plurality of **optically pumped sources**,” “wherein each optically pumped source is configured to receive **injection light from an injection source outside the passive kerb location**.” (Emphasis added.) Independent Claims 16 and 19 recite similar elements. By contrast, Morales, Kim, and Stubkjaer, whether considered separately or in combination, fail to describe, teach, or suggest at least these claimed elements.

On page 6 of the instant Office Action, the Examiner conceded that Morales does not teach the above-mentioned elements. However, the Examiner has relied upon Kim to supply such elements. More specifically, the Examiner has equated the Fabry-Perot semiconductor laser diode (F-P SLD) of Kim to the “optically pumped source” as claimed. Applicants respectfully disagree. Fig. 5 of Kim clearly shows that the F-P SLD is part of an ONU, i.e., *not* at the kerb location. Accordingly, the F-P SLD of Kim is not the same as the “optically pumped source” at the “kerb location” as claimed.

To support the above rejection, the Examiner has further equated the pseudorandom bit sequence (PRBS) generator in Fig. 1 of Kim to an ONU, and asserted that the PRBS provides data modulated pumping light as does an ONU. Applicants again respectfully disagree. Indeed, Kim clearly describes, on page 1068, left column:

...The F-P SLD was **modulated directly** by pseudo-random nonreturn-to-zero (NRZ) data...

(Emphasis added.)

Indeed, the PRBS of Kim together with the F-P SLD are part of the ONU, and the F-P SLD is *not* pumped by the PRBS as asserted by the Examiner.

Further, there is no reason, motivation or suggestion to combine Morales, Kim, and Stubkjaer, or to modify the systems disclosed therein to arrive at the claimed embodiments. For example, Kim teaches using the “F-P SLD located at the optical network unit (ONU)” as opposed to single-port laser modulators at ONU to be more cost-effective “since it replaces multiple single-mode lasers and semiconductor optical amplifiers by a broad-band ASE source and low-cost F-P SLD’s, respectively.” (See, section III, Discussions and Summary.) If the system of Kim were modified to place the F-P SLD’s at the Kerb location, the ONU side would further transmitters. None of the cited references suggests what these transmitters at the ONU side would be. However, as known in the art, these transmitters are likely to be single-port laser modulators. This is because if F-P SLD’s are also used at the ONU side in addition to at the kerb location, it will significantly add system complexity to Kim because the injection light from the Broad-band amplified spontaneous emission (ASE) source now needs to travel through the

optical fibers linking the purported hub and the purported kerb location, *and* the optical fibers linking the kerb location and the ONU. The resulting system may even become inoperable because of fiber losses. Thus, the modified system of Kim would go back to employing single-port laser modulators at thus ONU, and thus become unsatisfactory for its intended purpose. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In view of the above, Claims 1, 16, and 19 are patentable over the cited references for at least the reasons discussed above. Claims 4, 8-10, 13-15, 20, and 33, which depend from Claim 1, Claims 21 and 23, which depend from Claim 16, and Claims 30 and 32, which depend from Claim 19, are also patentable for at least the same reasons. Accordingly, Applicants respectfully request withdrawal of the rejection of Claims 1, 4, 8-10, 13-16, 19, 21, 23, 30, 32, and 33 under 35 U.S.C. § 103(a).

B. Claims 11, 12, 20 and 34

On page 16 of the Office Action, Claims 11, 12, 20 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over a combination of four different references, namely Morales in view of Kim, Stubkjaer, and U.S. Patent No. 6,434,175 to Zah (hereinafter “Zah”). For at least the following reasons, Applicants respectfully traverse the rejection.

As discussed above, Morales, Kim, and Stubkjaer, whether considered separately or in combination, fail to describe, teach, or suggest all of the elements of independent Claim 1. Zah fails to cure the deficiencies discussed above with respect to Morales, Kim, and Stubkjaer. This is also evidenced by the fact that Zah was relied upon in the instant Office Action merely to supply, e.g., an external cavity laser. Thus, Claims 11, 12, 20 and 34 are patentable over the cited references for at least the reasons discussed above with respect to independent Claim 1. Accordingly, Applicants respectfully request withdrawal of the rejection of Claims 11, 12, 20 and 34 under 35 U.S.C. § 103(a).

V. New Claims

New Claims 43 and 44 are added. Support for these claims can be found, for example, in previously presented Claims 35 and 37. Claims 43 and 44 depend from Claim 1, and thus should be allowable for at least the reasons discussed above with respect to Claim 1. Accordingly, Applicants respectfully request entry and favorable consideration of new Claims 43 and 44.

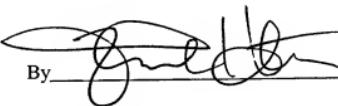
Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extension of time is needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extension fee to Deposit Account No. 19-0741.

Respectfully submitted,

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